
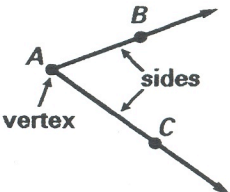
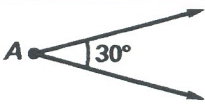
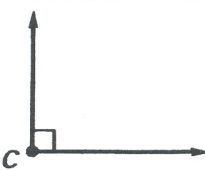
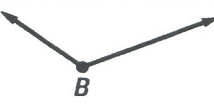
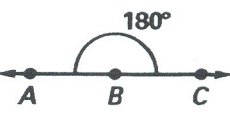


Drawing and Measuring Angles**GOAL****Draw, measure, and identify angles.**

Accurate measurement of angles can lead to solving real-life problems such as the height of a mountain.

Terms to Know**Example/Illustration**

Ray part of a line that consists of a point, called an <i>initial point</i> , and all points on the line that extend in one direction	 <p>initial point A</p>
Angle consists of two different rays that have the same initial point. The rays are the <i>sides</i> of the angle, and the initial point is the <i>vertex</i> of the angle	 <p>This angle has sides \overrightarrow{AB} and \overrightarrow{AC}, and it is denoted by $\angle BAC$, $\angle CAB$, or $\angle A$.</p>
Acute Angle angle with measure between 0° and 90°	 <p>$\angle A$ measures less than 90° and is called acute.</p>
Right Angle angle with measure equal to 90°	 <p>$\angle C$ measures 90° and is called a right angle.</p>
Obtuse Angle angle with measure between 90° and 180°	 <p>$\angle B$ measures more than 90° and is called obtuse.</p>
Straight Angle angle with measure equal to 180°	 <p>$\angle CBA$ measures 180° and is called a straight angle.</p>

Understanding the Main Ideas

The ancient Babylonians used a base 60 number system. They divide a full circle into 360 degrees. One degree is $\frac{1}{360}$ of the way around the circle. We continue to use degree measurement today.

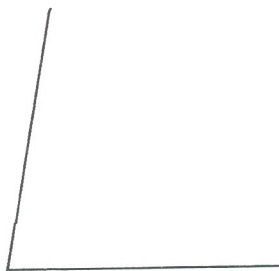
The measurement of $\angle A$ is denoted by $m\angle A$. Angles can be measured by using a protractor by placing a vertex of the angle at the center of the base and one ray along the base. Extend the other ray until you can read the measurement. Most protractors read both right to left and left to right. Read from the ray along the base to the other ray starting with 0° .

A protractor can also be used to draw an angle. Draw a ray from the center point (vertex) along the edge to the right or left. Then mark the degree measurement desired using the bottom numbers if the first ray points to the right and the top numbers if the first ray points to the left. Draw a ray from the vertex to the mark.

Angles and Their Measures

Find the measure of each angle to the nearest degree.

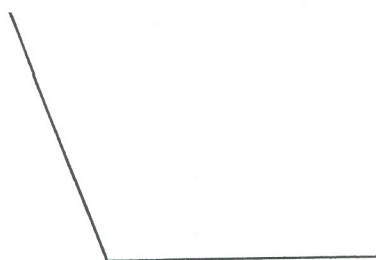
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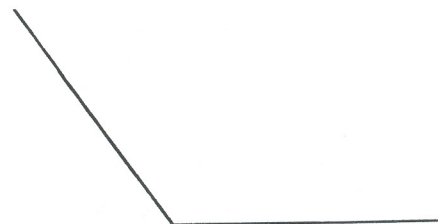
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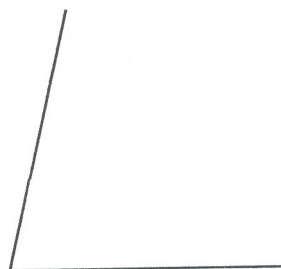
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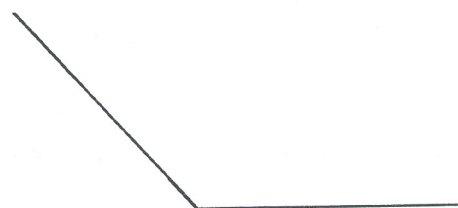
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7)



8)



9)



10)



Draw an angle with the given measurement.

11) 90°



12) 70°



13) 120°



14) 105°



15) 31°



16) 166°



17) 144°



18) 53°



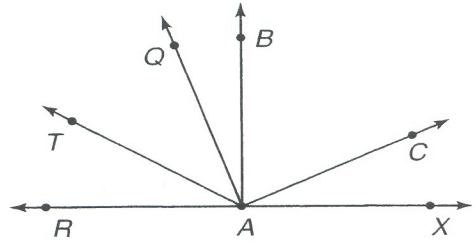
Skills Practice

1,4 Blue Book

Angle Measure

Use a protractor to find the measure of each angle.
Then classify each angle as acute, obtuse, or right.

- | | |
|------------------|------------------|
| 1. $\angle TAR$ | 2. $\angle BAX$ |
| 3. $\angle CAX$ | 4. $\angle TAX$ |
| 5. $\angle BAR$ | 6. $\angle QAB$ |
| 7. $\angle RAC$ | 8. $\angle TAC$ |
| 9. $\angle QAC$ | 10. $\angle QAR$ |
| 11. $\angle QAX$ | 12. $\angle TAB$ |



Use a protractor to draw an angle having each measurement.
Then classify each angle as acute, obtuse, or right.

- | | | |
|----------------|-----------------|-----------------|
| 13. 50° | 14. 120° | 15. 90° |
| 16. 25° | 17. 100° | 18. 140° |
| 19. 10° | 20. 135° | 21. 85° |